REMARKS

These remarks are in response to the Office Action dated March 4, 2008. Applicants respectfully request a three month extension of time. Authorization is given to charge Deposit Account No. 50-0951 for the appropriate extension fees.

At the time of the Office Action, claims 1-4 were pending in the application. An objection was raised to the abstract. Claims 1-4 were rejected under 35 U.S.C. §103(a). The objections and rejections are discussed in more detail below.

I. Objection to the Abstract

The abstract was objected to because it should be a single paragraph following the claims and a separate sheet which is directed to the claimed subject matter. Applicants note that the abstract was filed with the application on July 5, 2005 on a separate sheet of paper, as one paragraph. Applicants have checked the Image File Wrapper of this application in PAIR, and a complete copy of the application as filed by applicants, is included as "Documents filed with 371 application" dated July 5, 2005. The copy of the abstract that is referenced in PAIR and that was taken from the published PCT application was taken by the USPTO from the PCT file. Given that a copy of the abstract in proper form is already of record in this application, applicants do not believe that another copy is needed. However, in the interests of expeditious prosecution, a further copy of the abstract is filed herewith. Withdrawal of the objection is thus respectfully requested.

II. Claim Rejections on Art

Claims 1-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over EP 0094208 to Agarwal (hereafter "*Agarwal*") in combination with EP 1153653 to Filippi et al. ("*Filippi*"). Applicants respectfully submit that claim 1 is patentable over these references.

The present invention relates to a method for controlling the reaction temperature in a catalytic bed of a chemical reactor by means of at least one heat exchanger, crossed by a respective operating fluid, immersed in the catalytic bed. The heat exchange fluid for controlling the temperature of the chemical reaction is surrounded by the environment (the catalytic bed) where the reaction takes place.

To the contrary, in *Agarwal*, it is the space where the chemical reaction takes place that is surrounded by a cooling fluid. From figure 1 and the corresponding description of *Agarwal* (see, for example, page 4, lines 21 and 26), it is clear that the reactor according to *Agarwal* is provided with a plurality of tubes, internally filled with catalyst. In this type of reactor, which is conventional in the olefin oxide manufacturing processes, as stated at page 1, lines 28-30 of *Agarwal*, the reaction temperature control takes place by a cooling fluid flowing outside the tubes.

The reaction temperature control of *Agarwal* is thus of a totally different nature with respect to that of claim 1, in which the reaction temperature is controlled by means of a heat exchanger immersed in a catalytic bed. The operating parameters, such as the temperature profile in the reaction space, and the heat exchange coefficients substantially differ if it is the heat exchange fluid that surrounds the reactants (i.e. the reaction space) or vice versa.

Applicants also note that the method controls the temperature of reaction tubes along the entire length of the tubes (see for instance page 4, lines 7-10). *Agarwal* states that cooling fluid velocity is used (among other parameters) for controlling the temperature along the tubular reactor length, between a minimum and a maximum value. In contrast, the method of claim 1 reduces the size of the temperature gradient in a catalytic bed, between the heat exchanger outer walls and the limit temperature of the catalytic bed. This technical problem cannot be present in *Agarwal* because of the different structure of the reaction space (i.e. the externally cooled tubular reactor).

Furthermore, according to the presently claimed method, the heat exchange fluid velocity is set in order to keep the heat exchange coefficient inside the heat exchanger lower that the heat exchange coefficient in the catalytic bed. This distinguishing feature is not taught or suggested by *Agarwal*, which clearly teaches to substantially increase the heat exchange coefficient of the cooling fluid when cooling the reaction mixture. In fact, in *Agarwal* the coolant is made to evaporate during heat exchange with the reaction mixture flowing inside the catalytic tubes (throughout *Agarwal*, reference is made to the heat of vaporization of the coolant λ), and thus its physical state changes from liquid to gaseous. This means that the heat exchange coefficient of the coolant is increased at least by a factor ten by such a change in the physical state, which is thus much higher than the heat exchange coefficient within the catalyst tubes.

In this respect, it is worth noting the claimed method in which the heat exchange coefficient inside the heat exchanger is lower than the heat exchange coefficient in the catalytic bed is in clear contrast with the constant teaching of the prior art, which states to increase the heat exchange coefficient within the heat exchanger. To the contrary, Applicants have surprisingly found out that by suitably reducing the heat exchange coefficient within the heat exchanger, an unexpected beneficial effect is obtained in the surrounding catalytic bed, wherein at a predetermined height of the catalytic bed, a more uniform reaction temperature is present, providing advantages in the reaction efficiency and in the conversion yield.

Filippi merely concerns a method for controlling the temperature in a catalytic bed, but does not teach or suggest the features of present claim 1.

For the foregoing reasons, claim 1 is patentable over the prior art. Claims 2-4 are also patentable because of their dependence on an allowable base claim, and because of the further features recited therein.

III. Conclusion

Applicants have made every effort to present claims which distinguish over the prior art, and it is thus believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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